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ABSTRACT

As the second assessment study of developmental education programs at state-assisted higher education institutions, this 1978 study reviews reports from 27 of 57 programs receiving funds from the Ohio legislature. Reports dealing with attitudes and opinions of the programs indicated that the responses of the majority of students were strongly positive, probably due to significant improvements in basic skills. Several colleges reported modifying their programs according to student reaction and had better outcomes after making changes. Reports dealing with achievement of course objectives used a variety of measurements, yet most cited student performance improvement associated with participation in developmental services. These reports investigated student improvement in math, reading, and/or English. Math and reading skill improvements were significant for each program, with some English students increasing reading skills by two grade levels. Reports classified as follow-up studies indicated that students who had participated in developmental programs tended to do well once enrolled in regular courses, compared favorably in retention with regular students, and adjusted more easily to regular courses than non-developmental students. Summaries of all 27 reports, a list of the members of the governing subcommittee, and copies of each report are included. (TR)

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RESULTS OF SECOND ASSESSMENT STUDY OF DEVELOPMENTAL EDUCATION PROGRAMS IN OHIO

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Report by

Subcommittee to the State-Wide Advisory Committee
on Developmental Education

to Study

Effectiveness of Developmental Education Program Components
in Ohio

Prepared by
Richard C. Romoser, Chairman

JULY 1978

JC 780 431

RESULTS OF SECOND ASSESSMENT STUDY OF DEVELOPMENTAL EDUCATION PROGRAMS IN OHIO

This is the second assessment study of Developmental Education programs at State-assisted institutions of higher education, funded in part by the Ohio Legislature. The first report, published in October, 1976, served as a model for this second effort, but our expectations were that, by providing samples of responses from the first study, we could improve the quality and quantity of the second response. However, many program directors were still unable to prepare assessment reports, indicating they lacked either the time or resources to devote to a study of outcomes. Many directors suggested that work on a third study begin at the onset of a new funding year so that plans for assessments could be worked into the design of activities for the upcoming year.

In March of 1978, directors of 57 programs with State funding for Developmental Education were asked to report efforts to assess the impact of components of their programs. This request was made by a Subcommittee organized by the Ohio State-Wide Advisory committee on Developmental Education. By early June, 20 institutions submitted 28 assessment studies. After reviewing the studies, we found that 27 of these could be grouped into three broad classifications. One report was unusable in its present form. Our three major classifications are:

1) Assessments of attitudes and opinions about the Developmental Education program;
2) Assessments of achievement of course objectives; and
3) Follow-up studies

This report is presented in the following sequence. The first part contains a summary statement for each study. The summary statements are organized by the three major classifications and alphabetized within the classification by name of the institution.

The second section presents the overall summary.

The third section is the Appendix which contains a list of the members of the Subcommittee on Effectiveness of Developmental Education Program Components in Ohio and a copy of each report as received by the Subcommittee.

Assessments of Attitudes and Opinions About the Developmental Education Program

Northwest Technical College (Cramer)

Out of 21 students enrolled in a Developmental Reading program, 14 showed satisfactory improvement. The 7 who showed little or no progress were students who stopped attending class regularly. The average reading increase was one grade level. Student evaluations indicated the majority of students were pleased with their rapid gains in reading and recommended that the course be offered each quarter.

Ohio University (Bubenzer)

Students receiving tutoring assistance and who attended help sessions, were asked to complete end-of-quarter evaluation forms. Of 313 evaluations, 282 (90 percent) indicated improved class performance as a result of attending the help session, 5 said the sessions had no effect and 26 were uncertain of their effect.

Shawnee State Community College (Fluty)

Students petitioning for graduation in April, 1978 were surveyed to find out how many had utilized D.E. services and to learn their opinion about the services. Ninety-four people responded, with 68 of those indicating they had used one or more D.E. service and offering comments on those services. After reviewing student comments, the Shawnee staff recommended extending the program by offering a more comprehensive orientation program for entering students, more flexible scheduling for D.E. courses, a systematic training of peer tutors, longer hours, larger staff and more material for the Learning Center and increasing articulation with the regular curriculum.

Assessment of Achievement of Course Objectives

Agricultural Technical Institute (Swaino)

Pre-tutorial and final course grades for students participating on a peer basis in the one-to-one tutorial program were compared over two years of operation. Comparisons showed in the second year that the peer ATI Tutorial Program is more effective during the 1977-78 academic year than it was for the ccomparable time period of the 1976-77 academic year and the peer ATI Tutorial Program attracted and involved more students during that same time period.

Bowling Green State University (Downs)

The Student Development Program has improved its effectiveness over the years 1971-72 to 1977-78 as indicated by an increased retention of students (from 70 percent to 84 percent), an increased college GPA (from 2.01 to 2.22), and a decreased number of hours of tutoring and counseling required for the program (from 2690 to 1048 tutoring hours and 4000 to 667 counseling hours), although the number of students in the program has increased (from 600 to 769).

Clark Technical College (James)

Students who completed the reading component of the 10-week long Pre-technical Communications classes showed an average improvement of better than two grade levels measured by the Nelson-Denny Reading Test (Forms C and D), irrespective of whether they scored below or above 50 on the pre-test.

Cleveland State University (Pruitt)

Freshmen receiving 20 hours of D.E. Math instruction per quarter were measured for progress in grade level improvement. Based on the measurement, it was determined that 20 hours of instruction and a pre-test score of 10.1 on the Mathematics section of the Wide Range Achievement test was inadequate and a program of 40 hours of instruction and a critical pre-test score of 12.3 grade level has been instituted. As a result of this change, performances in the D.E. Program have shown marked increases.

Columbus Technical Institute (Pfannenstein)

Pre- and post-test scores for 216 from a total of 450 students participating in a Reading/Study Skills course were compared. The average reading-level improvement was 1.8 with 94 percent of the evaluations showing high satisfaction with the course and high recommendations to friends.

Cuyahoga Community College - Metropolitan Campus (Franklin)

Evaluative feedback from students and test data from the National League of Nursing compared performance in Winter, 1978 with Fall, 1977. The comparison indicated that the tutorial/mini-course program designed to improve NLN test scores should be continued.

Lorain County Community College (Simmons)

Pre- and post-test raw scores and a test for correlated samples to test for significance of difference were compared for 47 students enrolled in

LCCC's D.E. Math course, DVED 050, Fundamentals of Math, Fall Quarter, 1976-77. The analysis revealed an 8.5 gain in basic arithmetic skills from an average of 22.1 to 30.6, statistically significant beyond the .001 level.

Miami University - Middletown (Curran)

The final grades for all freshmen and sophomore students being tutored were compared with grades at the onset of tutoring. Out of forty students, 37 had improved grades, 2 remained the same, and one completed a course with a grade lower than the grade they received at the beginning of the course.

Michael J. Owens Technical College (Lang)

Completion rates of students enrolled in Developmental Math course offerings were compared for Fall, 1976 and Fall, 1977, after several new program objectives were designed to more effectively meet the needs of students. In Fall, 1977, 62 percent of enrollees completed the program in one quarter, compared to 23 percent in Fall, 1976; the number of students receiving passing grades increased 39 percent; there was a one percent decrease in withdrawals; 29 percent fewer received incompletes; and there was a 9 percent decrease in failures.

Northwest Technical College (Cramer)

Out of 21 students enrolled in a Developmental Reading program, 14 showed satisfactory improvement. The 7 who showed little or no progress were students who stopped attending class regularly. The average reading

increase was one grade level. Student evaluations indicated the majority of students were pleased with their rapid gains in reading and recommended that the course be offered each quarter.

Ohio State University/Central Ohio Technical College-Newark (Hubbard)

Eighteen students who completed the 10-week Reading Skills Development Seminar showed appreciable gains in reading rate (one year, seven months) on the Nelson-Denny Reading Test and comprehension (five months) with some loss in vocabulary (one and one-half months). The average pre-test reading rate was tenth year, eighth month; the average pre-test comprehension level was eleventh year, eleventh month; and the average pre-test vocabulary level was twelfth year. The average reading rate on the final E.D.L. Reading Efficiency Check was 372 words per minute compared to 258 words per minute at the beginning of the course.

Ohio State University (Higgins)

The grade equivalent scores (Nelson-Denny) for a group of students entering non-credit developmental education reading improvement course was 10.9 years, compared to 12.8 when they completed the course, which lasted 2.5 months. The amount of improvement indicated that the learning rate during the course was 8.5 times faster than the average rate prior to enrollment in the course.

Ohio University (Govan)

Nine freshmen dropped from the University after Fall, 1977 for academic reasons were readmitted to participate in "Aide in Developmental Education" (A.I.D.E.). The 9 were allowed to enroll for a maximum of 12

credit hours, were severely limited in extra-curricular activities, selected courses with counselor assistance according to competencies and basic skills needs, enrolled in one beginning Black Studies course, and met weekly with a Developmental Education counselor. After one quarter, 3 showed marked improvement in GPA and motivation and continued for Spring Quarter in the A.I.D.E. program; 6 students did not show significant improvement and were dropped from the University after the Winter Quarter.

Ohio University (Hollow)

One hundred forty-eight students participating in the Student Development Center reading program, working individually and enrolled in a course during Fall and Winter Quarter 1977-78, were given a pre- and a post-test for reading rate and comprehension. In the Fall Quarter, the average gain in reading skills was 6.9 percentile points; in Winter Quarter, the average gain in reading skills was a 1.1 grade level equivalent.

University of Akron (McKoski and Vukovich)

One hundred and forty-five students enrolled in Developmental English Fall Quarter, 1977 were given pre- and post-tests after completing a 10-week course. The raw score sample mean for the pre-test was 31.80, for the post-test, 39.04. The difference between these sample means, 7.24, was found to be significant beyond the .0005 level for a one-tailed test.

University of Akron (McKoski and Vukovich)

Twenty-five students enrolled in Developmental Mathematics Fall, 1977, were given pre- and post-tests after completing the 10-week course. The raw score sample mean for pre-test was 9.68, for the post-test, 20.12. The difference, 10.44, was significant beyond the .0005 level for a one-tailed test.

University of Akron (McKoski and Vukovich)

Twenty-five students enrolled in Developmental Reading Fall Quarter, 1977 were given a pre- and a post-test after completing a 10-week course. The raw score sample mean for the pre-test was 32.84, for the post-test, 36.56. The difference between these sample means, 3.72, was found to be significant beyond the .01 level for a one-tailed test.

Wright State University (Buerschen and Shearer)

Pre- and post-tests for students enrolled in Developmental Math (093 Basic Math Skills) for 1977-78, were compared. For most students, completion of the course did result in an increase in basic arithmetic skills. (The t-test for difference showed the .6 level.)

Wright State University (Lytle and Shearer)

Pre- and post-tests for students enrolled in the Developmental English (092 English Skills) for 1977-78, showed an increase in basic English scores. (The t-test for improvement was at the .29 level.)

Wright State University (Young, Fornal and Shearer)

An analysis of the pre- and post-tests for students enrolled in Developmental Study Skills/Reading Improvement (091), showed that students were able to raise one or more grade levels in reading after 10-weeks of study, and all students achieved a college-level of study habits, (7th decile on the Study Habits Checklist).

Follow-Up Studies

Belmont Technical College (Salvador)

An individualized developmental education program was shown to be associated with a higher GPA in introduction to College English, comparing students who scored low on the college English placement test who chose to take individualized instruction and students who scored low and chose not to take individualized instruction. Those who did take part in individualized instruction had a 50 percent retention rate, the same as the retention rate for students who did not score low on placement tests. None of the students who scored low and did not take individualized instruction remained at the college. The GPAs for students overall at Belmont Technical was 2.64; low-scoring students enrolled for individualized instruction had GPAs averaging 2.77; low-scoring students choosing not to enroll in individualized instruction had GPAs averaging 1.06.

Central State University (Floyd)

A random group of 156 students on the Academic Probation List who tended to evade D.E. services, were enrolled in the prescriptive D.E. courses, tutoring, personal and academic counseling, and some diagnostic testing. Of the 156 persons in the sample, 49 percent (76) gained regular status at the University, 9 percent (14) were dropped for inadequate scholarship, and 42 percent (66) were retained on the probation list.

Cuyahoga Community College - Eastern Campus (Nahas)

A survey of students enrolled in D.E. non-credit mini-courses, Fall 1977 and Winter 1978 showed that 86 percent eventually enrolled in

college credit courses, and that the exposure to mini-courses provided the basis for easier student transition to the college and its academic curriculum.

Ohio University (Govan)

Nine freshmen dropped from the University after Fall, 1977 for academic reasons were readmitted to participate in "Aide in Developmental Education" (A.I.D.E.). The 9 were allowed to enroll for a maximum of 12 credit hours, were severely limited in extra-curricular activities, selected courses with counselor assistance according to competencies and basic skills needs, enrolled in one beginning Black Studies course, and met weekly with a Developmental Education counselor. After one quarter, 3 showed marked improvement in GPA and motivation and continued for Spring Quarter in the A.I.D.E. program; 6 students did not show significant improvement and were dropped from the University after the Winter Quarter.

Shawnee State Community College (Fluty)

Students petitioning for graduation in April, 1978 were surveyed to find out how many had utilized D.E. services and to learn their opinion about the services. Ninety-four people responded, with 68 of those indicating they had used one or more D.E. service and offering comments on those services. After reviewing student comments, the Shawnee staff recommended extending the program by offering a more comprehensive orientation program for entering students, more flexible scheduling for D.E. courses, a systematic training of peer tutors, longer hours, larger staff and more material for the Learning Center and increasing articulation with the regular curriculum.

Sinclair Community College (Doll)

Thirty-two percent of the students graduating from Sinclair Community College had taken one or more developmental education course, while only 20 percent of the overall student body enrolls in developmental education courses.

University of Akron (McKoski and Vukovich)

The records for all students enrolled in Developmental Math (020:051) Fall Quarter, 1977 were checked the following quarter to see if they enrolled in a credit course and if they did, to check for grades of D or better (passing). Approximately 80 percent of the students who had been enrolled in the 10-week D.E. course did return to the University the following quarter, comparing favorably to a university-wide retention rate varying between 75-80 percent. Of the students enrolling in a regular college course, 60 percent passed.

SUMMARY AND DISCUSSION

By reviewing reports dealing with assessment of attitudes and opinions about the developmental education program, we found that the majority of students were strongly positive in their responses, recommending that the programs be offered regularly and even extended in some cases.

We believe that one obvious reason for the positive attitudes was that students made significant improvements in their basic skills because of the program. For instance, it was not unusual for students to improve more than a full grade level during an eleven week course of intensive study, and most studies which applied tests of statistical significance found that improvement was highly significant.

Several colleges reported they had modified their programs according to students' reactions and suggestions, and could report better outcomes after making these modifications.

The reports that dealt with assessment of achievement of course objectives were quite varied--using diverse measurements--yet, most cited clear examples of improvements in student performance associated with participation in developmental education program services.

Five of the studies looked at student improvement in math studies after receiving developmental instruction. As a result of one of these studies, the program adjusted the critical pre-test score used for screening, and the number of hours of instruction to enhance student improvement. There were examples of significant improvements in math skills in each of the other programs.

Each of the ten studies that looked at students who participated in developmental activities in reading or English showed appreciable improvements. Some students increased their reading skills by two grade levels, and one study reported a learning rate 8.5 times faster than the average learning rate for students prior to enrollment in the course.

In some special tutorial or counseling programs the primary objective was better grades while others aimed at better grade performance by concentrating specifically on helping students to improve their self images and educational habits. These reports showed that most students who have had difficult times achieving satisfactory grades and who have been erratic in their scholastic habits have been helped by the special attention developmental education provides.

The reports that we classified as "follow-up" studies focused upon a variety of concerns. Briefly, they showed that students who have shown a need for special help and who enrolled in developmental courses, tended to do well once they enroll in regular college courses, compare favorably in retention with the rest of the student body, and have an easier time adjusting to regular courses. Several reports from two-year colleges showed that the percentage of graduates having experience with the services was greater than the percentage of the general student body using the services.

One such study was conducted in Marion Technical College during the Spring Quarter of 1976. Current students, former students and graduates were surveyed. About 41 percent of the graduates had used developmental

education services at the college, while only 14 percent of the former students had used the services. By comparison, 25 percent of the currently enrolled students had used the developmental education services.

The studies did not conclusively demonstrate that developmental education services enhanced the likelihood of a student earning an associate degree, but this seems to be a plausible possibility particularly in view of the fact that the percentage of students who continue in college, that is, those who come back for another term, is usually no higher for students who use developmental education services than for the regular student body and may be considerably less for the developmental education service users. We have noted great variability in this figure from institution to institution, ranging from one out of two students returning to three out of four students returning. However, even considering the possibly low retention rate, the percentage of the associate degree graduates who have used developmental education services is substantially higher than would be expected. This must be a matter of interest to educational planners and educational policy makers.

An explanation of the dynamics at work here might be something like the following. Students who need the support of services in a developmental education program in order to benefit from post-secondary education are "high risk" students, in that they are less well prepared for college-level studies, and therefore are less likely to succeed in any given college-level course and consequently less likely to continue through a standard sequence of courses from term to term.

There may be a variety of reasons for students having poor preparation for college-level education, but if they are able to make up deficiencies through the developmental education support services, they may be encouraged enough by their improved performance that they are willing to persevere in their studies even though they may be at a scholastic disadvantage. Furthermore, over time the developmental education support services may successfully compensate for the initial disadvantage, enabling the students to continue all the way through a program of study.

The question remains as to why such students may constitute a larger proportion of the graduating class than would normally be expected. In this regard, we might speculate that these students either actually do not have as many options or perceive themselves as not having as many options as other students. These options may include both opportunities to obtain jobs before completing a program of studies and opportunities for transfer to another college. Under either circumstance, they would continue in a given college until completion of the degree.

Regardless of the explanation for the unexpectedly high percentage of students in the graduating class who have availed themselves of developmental education services, follow-up data shows a gratifyingly high job placement rate for graduates of career programs in two-year colleges. Since a high percentage of these graduates have used developmental education services, the most likely conclusion seems to be that the developmental education services <u>are</u> helping people who would not otherwise be able to benefit from college-level programs.

The general conclusion from these reports is that while developmental education activities cannot insure student success, and they do not help everyone they are designed to help, they do provide alternatives that stimulate many students and help them achieve educational goals they have had difficulty achieving in the past.

APPENDICES

Members of Subcommittee on
Assessment of Effectiveness 1977-78

Mr. Christopher Artale
Dean, Student Services
Lakeland Community College
Mentor, Ohio

Mrs. Judith J. Goetz
Director, Program Advisement
Firelands Campus
Bowling Green State University
Bowling Green, Ohio

Mr. Edward Hubbard
Coordinator, Newark Branch
Ohio State University/
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Newark, Ohio

Ms. Margaret Ralston Payne
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Dr. Richard C. Romoser, Committee Chairperson
Director, Educational Research and
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Cuyahoga Community College
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Mr. Robert Wise
Director of Academics
Terra Technical College
Fremont, Ohio

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University of Akron	Martin McKoski and Diane Vukovich	*Comparison of Pre- and Post-Test Scores for Ss Enrolled in Developmental Reading 061*	2

INSTITUTION	REFERENCE	TITLE	CLASSI-FICATION
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Wright State University	Elizabeth Buerschen Anne Shearer	*Comparison of Pre- and Post-Test Scores for Students Enrolled in Basic Math Skills*	2
Wright State University	Delores Lytle Anne Shearer	*Annual Report of Pre- and Post-Test Scores*	2
Wright State University	Willi Young, Anne Fornal, Anne Shearer	*Annual Report of Pre- and Post-Test Scores for Study Skills and Reading Courses*	2

REFERENCE: Swaino, Jean M.

TITLE: Coordinator, Developmental Education

SCHOOL: Agricultural Technical Institute

TITLE OF STUDY: Changes in Effectiveness of the ATI Tutorial Program for 1976/1977 and 1977/1978

DATES OF STUDY: Fall and Winter Quarters for the 1976-77 and 1977-78 Academic Years

DATE OF REPORT: May 10, 1978

ATI RESOURCE PERSONNEL: Ponto, K. H. and Mokma, A.

Population: Agricultural Technical Institute students who participated on a peer basis in the ATI Tutorial Program.

Sample: All students in the population were studied. (n = 265)

Design: Data were collected and summarized from tutee and/or tutor evaluation forms of the ATI Tutorial Program and final grade reports for the Fall, 1976/Winter, 1977 and Fall, 1977/Winter, 1978 academic quarters.

Treatment: Subjects were tutored on a one-to-one peer basis according to the tutee's individual need.

Measurement: The tutee's pre-tutorial grade was compared with the final course grade. Number of students and amount of paid tutor time was recorded as an indicator of program effectiveness.

Results and Conclusions:

Results: According to tables V and VI:

1. One-third more students increased their grade 1 or 2 letters or maintained their pre-tutorial grade.
2. The percentage of students experiencing a one letter grade decrease remained constant.
3. The rate of increase in student participation in ATI's Tutorial Program increased by 45% which is faster than ATI's total student population growth (11%).
4. The decrease in the "data not available" category is due to better student response to pre-tutorial evaluation.
5. The increase in paid tutorial contact hours was even greater (67%) than the amount of student participation (45%) in the program.
6. Students are spending more time with tutors.

Conclusions:

1. The peer ATI Tutorial Program is more effective during the 1977-78 academic year than it was for the comparable time period of the 1976-77 academic year.

2. The peer ATI Tutorial Program attracted and involved more students during that same time period.

TABLE I

A SUMMARY OF THE ATI TUTORIAL PROGRAM EFFECTIVENESS
FOR FALL, 1976 AND WINTER, 1977

Grade Change[1]	FALL, 1976 Number of Students	FALL, 1976 % of Students	WINTER, 1977 Number of Students	WINTER, 1977 % of Students
Two letter grade increase	3	5.4	2	3.8
One letter grade increase	7	12.5	4	7.7
Same grade	6	10.7	14	26.9
One letter grade decrease	5	8.9	4	7.7
Data not available	35	12.5	28	53.8
Number passing grade	46	82.1	37	71.2
Number failing grade	10	17.9	15	28.8
TOTAL NUMBER	56	100	52	100

TABLE II

PAID TUTOR CONTACT HOURS AND
AVERAGE TUTOR CONTACT HOURS PER TUTEE

	FALL, 1976	WINTER, 1977
Paid Tutor Contact Hours	455	539
Average Hours per Tutee	8.12	10.36

[1] Comparison is student letter grade pre-tutorial compared to final grade

TABLE III

A SUMMARY OF THE ATI TUTORIAL PROGRAM
FOR FALL, 1977 AND WINTER, 1978

Grade Change[1]	FALL, 1977 Number of Students	FALL, 1977 % of Students	WINTER, 1978 Number of Students	WINTER, 1978 % of Students
Two letter grade increase	15	17.9	14	19.2
One letter grade increase	33	39.3	13	17.8
Same grade	18	21.4	13	17.8
One letter grade decrease	5	6	8	11.0
Data not available	13	15.5	25	34.2
Number passing grade	69	82.1	61	83.6
Number failing grade	15	17.9	12	16.4
TOTAL NUMBER	84	100	73	100

TABLE IV

PAID TUTOR CONTACT HOURS AND
AVERAGE TUTOR CONTACT HOURS PER TUTEE

	FALL, 1977	WINTER, 1978
Paid Tutor Contact Hours	895	768
Average Hours per Tutee	10.65	10.52

[1] Comparison is student letter grade pre-tutorial compared to final grade

TABLE V

A COMPARISON OF THE ATI TUTORIAL PROGRAM
FOR FALL AND WINTER QUARTERS 1976-77 AND 1977-78 ACADEMIC YEARS[1]

Grade Change[2]	FALL, 1976 WINTER, 1977 Number of Students	% of Students	FALL, 1977 WINTER, 1978 Number of Students	% of Students	Change
Two letter grade increase	5	4.6	29	18.5	+13.9
One letter grade increase	11	10.2	46	29.3	+19.1
Same grade	20	18.5	32	20.4	+ 1.9
One letter grade decrease	9	8.3	13	8.3	0
Data not available	63	58.3	38	24.2	-34.1
TOTAL NUMBER	108	99.9	157	100.7	+45%

TABLE VI

PAID TUTOR CONTACT HOURS AND
AVERAGE TUTOR CONTACT HOURS PER TUTEE

	FALL, 1976 WINTER, 1977	FALL, 1977 WINTER, 1978	CHANGE
Paid Tutor Contact Hours	994	1663	+67%
Average Hours per Tutee	9.20	10.59	+15%

[1] Data for Spring and Summer Quarters for 1977 and 1978 are not available

[2] Comparison is student letter grade pre-tutorial compared to final grade

RETENTION

Reference: Allan Salvador

Title of Reference Person: Lecturer and Developmental English Teacher

School: Belmont Technical College

Descriptive Title of Study: A first phase summary of the attrition rate and GPA in the first class of students to be offered formal remedial help in English.

Period of Time Covered By Study: Fall Quarter 1976 to Spring Quarter 1978

Date of Report: Spring 1978

Population: Students participating in a non-credit developmental English class. In the Fall Quarter of 1976 Belmont Technical College instituted a course called Introduction to College English. The purpose of this course is to help lower the attrition rates and to raise the GPA of those students who need remedial help in English. Heretofor the remedial help in this area was on an informal basis. Therefore, this study will serve as a basis for comparison to test if subsequent participants are helped as a result of being in developmental English.

Sample: Those students placed in Introduction to College English by standardized test as compared to those students placed in regular English classes in the same manner.

Design: Students were selected for Introduction to College English on the basis of a standardized test called the College English Placement Test (CEPT). For this first formal class, the English department selected a cut-off point that will later be refined as the data from a number of these participants becomes available. Seventy-seven people were tested for this class; 55 were diagnosed as needing remedial help. The basis that is used for comparison is twofold. The first is overall retention of these 55 students as compared with the retention of the 22 students that passed the CEPT. The second basis for comparison is the overall GPA of those students retained from developmental through 1976 to 1978 as compared with the regular English students for that same time period.

Treatment: Participants in an individualized program which might include personal counseling, study skills development, reading development, and tutoring.

Measurement: Since this program has gone from an informal to a more formalized basis, the measurements are based on the overall attrition in the test group for both developmental and regular English classes and the GPA of the two groups, to see in developmental English had any appreciable effect on the participant's performance.

Goals: Higher GPA and increased retention.

Results: Out of the 55 students tested who needed remedial help, 42 eventually took Introduction to College English. The other 13 either did not enroll or went into programs not requiring English. Of the 42 students, 21 still remain with the College or have received degrees or certificates. This is a retention rate of 50% for the developmental students. The same is true for the 22 who passed the CEPT. Eleven have either received degrees or are still enrolled with the College for a retention rate of 50% also. The overall GPA for the retained developmental students is 2.77 as opposed to 2.64 for the regular English group. Of the 13 people who were eligible for developmental but who did not participate, eight enrolled. Those eight had a combined GPA of 1.06. It is also interesting to note that all eight did not remain with the College.

Conclusions: Those participants in the Developmental English program were helped by it. This group scored much lower on the CEPT then did the regular English students: yet their GPA is higher and their retention rate equal to the regular English group. A second piece of evidence is that those individuals who were eligible for developmental but did not take advantage of it had a lower GPA and a higher attrition rate.

Reference:	Dr. Raymond A. Downs Asst. Vice Provost for Student Development Bowling Green State University
Title of Study:	A review of tutoring and counseling hours and the relationship to GPA's, and resulting effect on retention rate of Student Development Program students.
Period of Time:	1971-1972 Academic Year 1975-1977 Academic Years 1977-1978 Fall and Winter Quarters
Date of Report:	May 10, 1978

Population:	All Student Development Program students
Sample:	All Student Development Program students for each time period as indicated above.
Design:	Comparisons made of student GPA's, and tutoring and counseling hours received for the school years 1971-72, 1975-76, 1976-77, and fall and winter quarters, 1977-78.
Treatment:	Academic tutoring, and personal counseling.
Measurements:	A longitudinal compilation of Program students' cumulative mean GPA's, total hours tutored and counseled, retention rates for time periods indicated were analyzed.
Program Goals:	To raise student GPA's To raise Program retention rate from the 1971-72 70% level.

Results:

1. The mean GPA of Program students has gone up from a 2.01 in 1971-72 to a 2.22 as of end of winter quarter, 1977-78.

2. As the mean GPA has risen, tutoring and counseling hours have decreased.

3. As the mean GPA has risen, the retention rate has also risen from 70% in 1971-72 to 84% as of end of winter quarter, 1977-78.

Table 1:

Year	Program Students	Mean GPA	Retention	Tutoring Hrs.	Counseling Hrs.
1971-72	600	2.01	70%	2,690	4,000*
1975-76	798	2.13	80%	1,055	1,017
1976-77	622	2.10	76%	1,600	898
1977-78	769	2.22	84%	1,048	667

*Funded

Conclusion: The review and analysis of the preceding data seems to indicate that student academic performance levels rise and there is an accompanying increase in retention rates as long as provisions are made for academic tutoring and counseling in the personal and social areas.

Further substantiation of the effect of supportive services is provided in Table 2 that provides a breakdown of Student Development students' performance by college and class for the year 1976-77.

Table 2:

College	FR.	SOPH.	JUNIOR	SENIOR	College Mean
Arts & Sciences	1.74	2.01	2.26	2.27	2.07
Business Adm.	1.66	2.12	2.25	2.35	2.10
Education	1.57	2.24	2.25	2.42	2.12
Health & Comm.Svcs.	1.76	2.23	2.10	2.40	2.12
Music Education	.32	2.92	-0-	2.93	2.06
Class Mean:	1.41	2.30	2.22	2.47	

The data appears to indicate that the longer the student remains in college and in the program which provides supportive services, the greater the impact of the services and the success of the student.

OUTLINE*

REFERENCE (Person to contact or author): Dr. William Floyd

TITLE OF REFERENCE PERSON: Quad Programs' Director

SCHOOL: Central State University

DESCRIPTIVE TITLE OF STUDY: Effects of effort to reduce number of students in academic difficulty: Academic Probation

PERIOD OF TIME COVERED BY STUDY: Winter Quarter

DATE OF REPORT: May 1978

Population: Students identified by Academic Probation List

Sample: A group of 156 students drawn randomly from stated list who tended to evade Developmental Education services.

Design: The sample was compared with its prior academic performance categorically, and particularly in terms of whether or not a specific effort, utilizing Developmental Education services would have a positive impact upon subsequent academic performances, and acquisition of regular University status.

Treatment: Prescriptive developmental courses, tutoring, personal and academic counseling, and some diagnostic testing.

Measurements: The number and per cent of sampled students acquiring regular University standing, dropped for poor academic performance, and those who were retained or continued on the probation roll for an additional quarter because of improved but limited performance.

Program Goals (i.e., higher GPA, retention, etc.): Acquisition of regular University status and retention.

Results: Of the 156 persons in the sample, 49% (76) gained regular status at the University; 9% (14) were dropped for inadequate scholarship; and 42% (66) were retained on the probation list.

Conclusions: Since the report reflects the initial effort directed specifically at Probation List students, and those who tended to evade Developmental Education services, and 8.9% of the sample were lost, the program is being recommended as a regular one. It is to acquire more structure and focus upon retention and self development.

Further Comments: None

REFERENCE (Person to contact or author): Sharon A. James

TITLE OF REFERENCE PERSON: Developmental Education Instructor

SCHOOL: Clark Technical College

DESCRIPTIVE TITLE OF STUDY: Reading Level Gains in Pre-Technical Communications Classes at Clark Technical College

PERIOD OF TIME COVERED BY STUDY: 1977-78 school year

DATE OF REPORT: May 1978

Population: Students completing the reading component of pre-technical communications during the 1977-78 academic year.

Sample: All students in the above population.

Design: Students completing pre-technical communications were considered as two groups: those who scored 50 and below on the Nelson-Denny Test Form C, and therefore were required to take the course, and those who scored above 50 on the Nelson-Denny Test, yet elected to take the class for general reading skill improvement.

The Nelson-Denny Test Form C was administered as a pre-test for both groups, and Form D was administered as a post-test.

Pre- and post-test scores were compared for differences in progress between the two groups, and overall progress in the class as a whole.

Treatment: All students enrolled in the ten-week (quarter) class begin with Basic Reading Comprehension Training. Students purchase TOPICS FOR THE RESTLESS (Jamestown)--a diagnostic and skill development workbook. As the quarter progresses, students work through appropriate materials on an individual contract basis. Students with high comprehension skills work to increase speed. Students having difficulties in particular areas of comprehension work to improve those areas. Upon completion of the class, a student's skills are accessed using the Nelson-Denny Test Form D and an individual interview.

Measurements: The Nelson-Denny Reading Test, Forms C and D

Program Goals (i.e., higher GPA, retention, etc.): Increase vocabulary and reading comprehension to a level commensurate with the average 11-12 grade level textbook.

Results:

Group A: Students required to take pre-technical communications: Reading

	Average Raw Score	Average Grade Level
Pre-test	43	9.3
Post-test	55	11.4
Gain	12	2.1

Group B: Students electing to take pre-technical communications: Reading

	Average Raw Score	Average Grade Level
Pre-test	54	11.1
Post-test	73	13.4
Gain	19	2.3

Conclusions: The reading component of pre-technical communications provides a basic skills improvement service to students taking the course. The class seems to be useful to students with low reading skills who are required to take the class, as well as to those students who wish to improve reading comprehension on an elective basis.

Further comments: none

OUTLINE*

REFERENCE (Person to contact or author): Dr. Ralph L. Pruitt

TITLE OF REFERENCE PERSON: Dean, Division of Special Studies

SCHOOL: Cleveland State University

DESCRIPTIVE TITLE OF STUDY: Progress of Developmental Mathematics Students in College Level Mathematics

PERIOD OF TIME COVERED BY STUDY: Fall, 1975 through Winter, 1978

DATE OF REPORT: June 1, 1978

Population:

Freshmen college students assigned to Developmental Mathematics courses

Sample:

One hundred eighty-one students whose test scores were below the 10.1 grade level.

Design:

The Wide Range Achievement Test (Mathematics Section), Level I, published by Guidance Associates of Delaware, Inc., was used as the pre-test and Level II was administered as the post-test. Pre- and post-test performances indicated grade level improvement ranging from the 3.1 grade level to the 5.0 grade level.

Treatment:

The students received 20 hours of developmental mathematics instruction per quarter. The instruction emphasized basic skills development and frequently made use of programed materials. Basic Mathematics, Form A, by Keller and Zant (Houghton & Mifflen) was the textbook used.

Measurements:

Measures of progress in Developmental Mathematics courses was determined by grade level improvement and expressed in terms of ranges, averages, and percents. Progress for those students who took college level mathematics courses was measured in terms of grades received in the courses.

Program Goals (i.e., higher GPA, retention, etc.):

To increase basic mathematics skills and knowledge

Results:

Twenty-six percent (93) of the grades made in college level courses were at the passing or better than passing grades. There were 4 A's, 15 B's, 37 C's and 37 D's. Thirty-seven percent (128) received grades of "F" and 37 percent (126) withdrew from courses. The results supported the claim that more than 20 hours of instruction and a higher critical pre-test score should be instituted. The later part of the study shows pre and post test results for all students after the critical score was raised and 40 hours of instruction were received. The grade level performances show marked increases. However, no students in this group have yet enrolled in a college level mathematics course. The first such enrollments will occur in Fall, 1978. The grade performance of these students will be studied beginning at the end of Fall Quarter, 1978 and extending through the year.

Conclusions:

The 20 hours of instruction and a critical per- test score of 10.1 grade level seemed inadequate. Thus a program of 40 hours of instruction and a critical pre-test score at the 12.3 grade level has been instituted. Pre and post-test scores improved after this change. Beginning in Fall 1978, the study will continue to compare grades received in college mathematics courses in the 20 hour instruction and 10.1 grade level group to the mathematics grades received by the group having 40 hours of instruction and the 12.3 grade level.

Further Comments:

C.S.U.

PROGRESS OF DEVELOPMENTAL MATHEMATICS STUDENTS IN COLLEGE LEVEL MATHEMATICS

(Fall, 1975 through ~~Spring~~ WINTER, 1978)

In the Fall of 1975, one hundred eighty one students whose pre-test scores on the Mathematics Section of the Wide Range Achievement Test (WRAT) were below the 10.1 grade level were placed in the Developmental Mathematics courses for 20 hours of instruction per quarter. The post-test scores of 149 of these students was at or above the 10.1 grade level. They were permitted to enroll in the regular college level courses. Thirty tow of the original 181 students returned for a second 20 hours of instruction in subsequent quarters. By Fall Quarter, 1976, they too post-tested at or above the 10.1 grade level.

During the Fall and Winter Quarters 1977-78, we sought to measure the progress of all 181 students in the regular college level mathematics courses taken from Fall, 1976 through Fall, 1977

Our assumptions even before this time was that the critical score for moving on to college level courses was too low. When Open Admissions went into effect in full swing in the Fall of 1977, the critical score was raised from the 10.1 grade level to the 12.3 grade level and the hours of instruction were increased to 40 hours per week. College mathematics scores for these students will be available by Fall, 1978. however, a survey of test performance for these students appears later in this report.

Table I shows that of the original 181 students, 56 grades of "C" or better were made in college mathematics while 37 grades of "D" were made. There were 128 grades of "F" and 126 withdrawals. This indicates each student obviously had tried at least one and often times two college mathematics courses by Fall 1976.

This also supported our decision about raising the critical score in Fall 1977. The experience with the 181 students we now knew would have shown greater improvement had the Fall, 1977 procedure been in operation.

Although complete evaluation of our Fall, 1977 procedure cannot be made until Fall 1978, we report the pre and post-test scores for all students enrolled in Developmental Mathematics from Fall 1976 through Winter 1978, to show how test performance improved.

Fall Quarter, 1976

Pre-Test Scores	Post-Test Scores
Average: 7.6	Average: 10.7
Range: 3.9-10.1	Range: 6.1-18.9

Average grade level increase 3.1

Students Released 130 (62.5%)

Students Retained 78 (37.5%)

Winter Quarter, 1977

Group A - 136 students for first 20 hours of instruction

Group B - 43 students for the second 20 hours of instruction

Group A (136 students)

Pre-Test Scores	Post-Test Scores
Range: 3.9-9.5	Range: 6.9-11.5
Average: 7.6	Average: 10.8

Average Grade Level Increase 3.2

Students Released 97 (71%)

Students Retained 39 (29%)

Group B (43 students)

Pre-Test Scores	Post-Test Scores
Range: 4.9-8.5	Range: 8.0-13.3
Average: 6.7	Average: 11.0

Average Grade Level Increase - 3.3

Students Released - 39 (90.5%)

Students Retained - 4 (9.5%)

Spring Quarter, 1977

Group A (53 students for 20 hours of instruction)

Pre-Test Scores	Post-Test Scores
Range: 3.9-9.5	Range: 7.4-15.3
Average: 6.1	Average: 11.1

Average Grade Level Increase - 5.0

Students Released - 41 (77%)

Students Retained - 12 (23%)

Group B (39 students for second 20 hours of instruction)

Pre-Test Scores	Post-Test Scores
Range: 3.9-9.0	Range: 7.4-13.8
Average: 6.8	Average: 10.9

Average Grade Level Increase - 4.1

Students Released - 32 (82%)

Students Retained - 4 (18%)

TABLE I - A DISTRIBUTION OF GRADES EARNED IN MATH COURSES BY STUDENTS WHO RECEIVED ONE TO TWO QUARTERS INSTRUCTION IN DEVELOPMENTAL MATH (1975 THROUGH 1977) PRIOR TO ENROLLING IN COLLEGE LEVEL MATH COURSES IN THE FALL AND WINTER QUARTERS - 1977-78 ACADEMIC YEAR

GRADE	MATH COURSES																							
	101	102	121	122	123	124	125	126	127	149	150	151	152	153	154	155	233	244	260	301	302	365	366	TOTAL
A	1	1	1																		1			4
B	1		3	4	1	1	3													1			1	15
C	2	1	15	7	3	1	3	2					1	1	1									37
D	1	3	18	7	4	1	1	1				1												37
F	1	2	56	40	7	6	1	1				3	4	3		1	2		1					128
NR										1	1				1		1							4
W	5	2	18	53	14	11	1	1		1	2	5	6		2		2	1					2	126
S										7	7													14
U										6	4													10

N = 181 Students

56 grades of "C" or better

93 passing grades

128 grades of "F"
126 Withdrawals

Fall Quarter, 1977

Normal hours of instruction increased from 20 to 40. N = 345

Pre-Test Scores		Post-Test Scores	
Range:	3.9-9.5	Range:	5.2-17.1
Average:	7.8	Average:	11.0

Average Grade Level Increase - 3.2
Students Released - 270 (78%)
Students Retained - 74 (22%)

Winter Quarter, 1978

Group A - 69 students for first 40 hours of instruction

Group B - 54 students for the second 40 hours of instruction

Group A (69 students)

Pre-Test Scores		Post-Test Scores	
Range:	4.4-9.5	Range:	7.4-15.9
Average:	7.3	Average:	10.9

Average Grade Level Increase - 3.6
Students Released - 39 (57%)
Students Retained - 30 (43%)

Group B (54 students)

Pre-Test Scores		Post-Test Scores	
Range:	4.4-9.0	Range:	8.0-15.3
Average:	7.0	Average:	12.0

Average Grade Level Increase - 5.0
Students Released - 51 (95%)
Students Retained - 3 (5%)

REFERENCE: Pfannenstein, Anne

TITLE OF REFERENCE PERSON: Supervisor of Developmental Education

SCHOOL: Columbus Technical Institute

DESCRIPTIVE TITLE OF STUDY: Report on Student Improvement in Reading/ Study Skills Course

PERIOD OF TIME COVERED BY STUDY: July 1977 - March 1978

DATE OF REPORT: May 5, 1978

POPULATION: Participants in Columbus Tech's Reading/Study Skills credit course.

SAMPLE: Randomly selected students in the above population.

DESIGN: Columbus Tech offers a 3 credit hour Reading/Study Skills course to all students every quarter. Primarily freshmen take the course to become more efficient students. Students who are very weak work with the Reading Lab instructor on an individualized basis to develop primarily comprehension and vocabulary skills. In all cases, pre and post-tests were given to measure gains in speed, comprehension, and reading level.

A total of 450 students participated in the Reading Program during the three quarters. Scores from 216 of these students were randomly chosen for this study. All of the students involved worked 3 hours per week during the 11 week quarters for a total of 33 hours.

TREATMENT: A variety of methods and materials were used based on the following factors: (1) diagnosed weak areas, (2) student's requests for needed help, (3) motivation level of the student. Materials used included The Now Student by Edward Spargo, Six-Way Paragraphs, Timed Readings, Controlled Reader materials, the Jamestown series Selections From The Black etc., Reader's Digests and teacher-made materials.

Records were kept on each student's test scores and cumulative work. The instructors constantly checked on student's progress and their improvement.

MEASUREMENT: The Nelson-Denny Reading Test, forms C and D.
Samples of general and technical articles

COURSE OBJECTIVES:
1. Increase student's self-confidence as a student.
2. Increase reading level to minimum of 10th grade or higher if required by technology.
3. Increase student's ability to use various reading skills on textbook materials.
4. Increase student's understanding and application of study skills techniques.

RESULTS:

	Pre-Test	Post-Test	Gain
Average General Speed	156	333	170
Average Comprehension	73%	88%	15% (109%)
Average Technical Speed	157	304	147
Average Comprehension	69%	86%	17% (94%)

Average Reading Level Improvement= 1.8

Ninety-four percent of evaluations showed high satisfaction with the course and indicated they would highly recommend it to friends.

Conclusions: Test data and feedback from students indicate that in most cases significant gains in reading and study skills were made by program participants.

REFERENCE:	Russell Nahas
TITLE:	Assistant Dean, Curriculum and Instruction
TITLE OF STUDY:	Knowledge/Application of Mini-Course Information and Skills: A Student Evaluation
DATES OF STUDY:	Fall Quarter 1977 Winter Quarter 1978
DATE OF REPORT:	May 10, 1978

Population: Students registered in non-credit mini-courses -- Fall '77 and Winter '78. These courses were developed and taught by members of Eastern's Learning Resources staff. For the most part, the students had not attended an educational institution for six years or longer, had encountered deficiencies in one or more basic skills areas, were uncertain about their educational/career goals and had expressed varying degrees of anxiety about their ability to do college-level course work.

Sample: A total of 105 registered mini-course students from three Fall '77 sections and two Winter '78 sections.

Design: The data for this study were gathered using a locally designed questionnaire. It included questions pertaining to: continued student enrollment at Cuyahoga Community College; the direct application of information and skills introduced in the mini-courses; use of various support services, and the degree of helpfulness from mini-course exposure to representative faculty.

Treatment: Mini-course followed by enrollment in credit and/or non-credit courses(s).

Measurement: A seven-item questionnaire measuring the direct application of mini-course goals was used to survey former mini-course students.

Program Goals:

1. To acquaint students with Eastern Campus and its support services.
2. To stimulate student interest and participation in systematic preparation for college-level study in the liberal arts, science or technical subject areas.
3. To increase student knowledge of specific process skills - reading and writing skills, note taking, outlining, test preparation and test-taking skills.

Program Goals:

4. To assist students in developing self-confidence about handling college-level learning experiences.

5. To introduce students to alternative teaching/learning approaches.

Results: Completed questionnaires were obtained by 36% of the registered student population. Of the students who responded, 86% subsequently enrolled in college credit course(s) and most enrolled as part-time students. Almost all respondents strongly favored mini-course contacts with representative faculty to discuss alternative teaching/learning approaches. Students applied their mini-course skills better in courses using lecture-discussion strategies rather than laboratory-unit study approaches. A far greater number applied their knowledge of process skills to individual study rather than to group study. The majority of students enrolled in English, philosophy, psychology, social science and humanities as well as the smaller number of students enrolled in history, business, science and math viewed the specific skills areas covered in the mini-courses as "very helpful." Student use of support services ranged from majority contact with a counselor and the library to limited communication with career center personnel and faculty.

Conclusions: Evaluative data from mini-course students indicate that the exposure to a mini-course activity provided the basis for easier student transition to the college and its academic curriculum.

Students, faculty and staff will be aided in their development if continued attention is given to coordinated instructional/support activities such as the mini-course.

REFERENCE:	Frances M. Franklin
TITLE:	Coordinator, Developmental Education- Open Skills Lab
SCHOOL:	Cuyahoga Community College Metropolitan Campus
DESCRIPTIVE TITLE OF STUDY:	EFFECT OF TUTORING AND ATTENDANCE IN MINI-COURSES ON STUDENTS TAKING THE NATIONAL LEAGUE OF NURSING TEST (NLN)
PERIOD OF TIVE COVERED:	Fall - Winter, 1977 - 1978
DATE OF REPORT:	May 9, 1978

POPULATION: Students seeking to secure better scores on the NLN Test in order to secure admission to the Nursing Program.

SAMPLE: 118 students

DESIGN: Diagnostic Testing of all students about to take the NLN, using the English, Reading and Mathematics Placement Tests in use at Cuyahoga Community College, Metro Campus. Dependent on results of above testing procedure, students were assigned to tutors for one-on-one instruction in the individual student's area(s) of weakness. Each student was also enrolled in a mini-course in a specific area of need.

TREATMENT: Tutorial assistance was provided for individual needs, using a wide variety of materials, such as individualized instructional packets (locally prepared) in English, Reading and Mathematics Skills, the Controlled Reader, and How to Study, by Pauk. Counseling was provided for all students, to reduce text-anxiety and to increase self-confidence.

Records were kept of each student's diagnostic test scores and of performance in tutorial sessions and/or mini-courses.

MEASUREMENT: Achievement of scores on NLN for eligibility for acceptance into Cuyahoga Community College, Metro Campus Nursing Program.

PROGRAM GOALS: Same as above.

RESULTS: Of 118 students taking the NLN, 19 for the second and 16 for the third time, during Winter, 1978, 81 or 69% were eligible for admission to the Nursing Program at Cuyahoga Community College, Metro Campus. This represents an appreciable improvement over the Fall Quarter 1977, when 121 students took the NLN, and 63 or 52% achieved scores which established eligibility for entry into the Nursing Program. This, of course, before the tutorial/mini-course program described above was instituted.

CONCLUSIONS: According to the results given above, it has been decided to develop and refine the tutorial/mini-course approach and to intensify our efforts to assist students to experience success in performance on the NLN.

FURTHER COMMENTS: Evaluative feedback from students and test data from the NLN comparing performance in Fall 1977 to Winter 1978 indicate that the tutorial/mini-course program should be continued.

abd

REFERENCE: (Person to contact or author) George A. Simmons

TITLE OF REFERENCE PERSON: Director of Developmental Education

SCHOOL: Lorain County Community College

DESCRIPTIVE TITLE OF STUDY: Comparison of Pre- and Post-Test Scores for Students Enrolled in LCCC's DVED 050 Fundamentals of Mathematics Course

PERIOD OF TIME COVERED BY STUDY: Fall Quarter, 1976-77

DATE OF REPORT: April 28, 1978

POPULATION: All students enrolled in LCCC's Developmental Education math course, DVED 050, Fundamentals of Mathematics, for fall quarter, 1976-77.

SAMPLE: All students from the above population for whom both pre- and post-test scores were available. This included a total of 49 students.

DESIGN: The Cooperative Mathematics Test: Arithmetic (Educational Testing Service) Form A was administered as a pre-test, and Form B was administered as a post-test.

Pre- and post-test raw scores for the total sample were compared and a test for correlated samples was used to test for significance of difference between pre- and post-test scores. The test used was:

$$t = \frac{\Sigma D}{\sqrt{\left[N \Sigma D^2 - (\Sigma D)^2\right] / N-1}}$$

TREATMENT: Students completed the 10-week quarter of instruction in basic arithmetic skills using a modular instructional approach utilizing the modules from Arithmetic: Developing Concepts and Skills, Harpers College Press, and supplemented by individual instruction provided by the course instructors.

MEASUREMENTS: Pre-test: Cooperative Mathematics Tests: Arithmetic - Form A
Post-test: Cooperative Mathematics Tests: Arithmetic - Form B

PROGRAM GOALS:	(i.e., higher GPA, retention, etc.) To develop increased knowledge and skills in basic arithmetic.
RESULTS:	Analysis of difference between pre- and post-test raw scores revealed that the increase reflected in post-test scores was statistically significant at the .001 level.
CONCLUSIONS:	Completion of the DVED 050 Fundamentals of Mathematics course did result in statistically significant increase in basic arithmetic skills.

REFERENCE: Mrs. Faye Curran, Coordinator of Developmental Education

Title of Reference Person: Coordinator of Developmental Education

School: Miami University Middletown

Descriptive Title of Study: Student Retention Due to Peer Tutoring

Period of Time Covered by Study: Fall, 1978

Date of Report: May 5, 1978

Population: Freshmen and sophomore students at Miami University Middletown.

Sample: All freshmen and sophomore students at MUM who registered for peer tutoring who did not withdraw from the course in which they were tutored or change their status to audit.

Design: Final grades in the course in which tutoring ensued as contrasted against beginning grades upon the onset of tutoring.

Treatment: Peer tutoring in the academic subject.

Measurements: Grade improvement.

Program Goals: To retain students for MUM through enhancing their academic efficiency and their study competence in the respective subject areas in which they were tutored.

Results: Successful college retention and matriculation in declared major areas for the students in question and successful reduction of attrition

Conclusions: Peer tutoring benefits students pursuing college studies while at the same time reducing attrition for the college.

Comments: Attached are data regarding the peer tutoring program for the fall of 1978 for Miami University Middletown.

Tutee	Subject of Tutoring	Total Hours Tutored	Beginning Grade In The Course	Final Grade In The Course
Adams, Sandy	Algebra 101	1	B	B
Akers, Shirley	Chemistry 111	20	D-	C
Ankney, Ken	English 111	5	D-/F	D
Baker, Ruby	Accounting 221	23	F	C
Barlow, Pat	Zoo 171	3	F	F *
Barnheiser, Judy	Spanish 101	3	C	L(audit)
Bennett, Krista	Zoo 171	5	F	B
Birich, Linda	Chemistry 111	19	F	C
Bowman, Ken	Marketing 301	8	F	C
Brandenburg, Mark	English 111	3	D	F
Buerkle, Betty	Zoo 171	3	D	D*
Burnett, Becky	Chemistry 111	15	D	C
Condon, Kathy	Accounting 221	3	F	D
Cox, Donna	Accounting 221	5	D	C
Dame, Mary	Zoo 171	7	D	C
Donisi, Jeff	English 112	25	F	B
Ferguson, Debbie	Algebra 101	16	F	C
Fishbaugh, Nancy	Accounting 222	23	D	C
French, Joy	Chemistry 111	14	D	C
Gambrel, Kathy	English 112	4	F	D
Gomola, Tom	Spanish 101	14	D	C
Hall, Cheryl	Accounting 221	24	F	C
Holdbrooks, Vanessa	Nursing 101	4	D	C
Lee, Diana Kay	Zoo 171	8	F	D
Miller, Jeff	Spanish 101	8	D	C
Milkr, Joni	Shorthand 201A	15	F	B
Morgerson, Bonnie	Chemistry 111	11	D	C
O'Neill, Michael	Geography 121	11	D	D
Peckham, Mark	Calculus 151	3	F	B
Roberts, Beverly	Chemistry 111	15	D	C
Robinson, Doug	Accounting 222	4	F	B
Scales, Ted	Physics 171	26	D	C
	Circuit Analysis 142.T	26	D	C
	Technical Math 182.T	26	D	B
Schulte, Sandy	Business Math 105	12	F	D
Shapard, Tommy	Math 104	9	D	B
	English 111	12	F	B
Sherron, Jennie	Chemistry 111	17	D	C
Simpkins, Elizabeth	Art 181	2	F	C
Smith, Barbara	Chemistry 111	6	D	C
Smith, Betty	Zoo 171	11	D	B
Thompson, Doris	Chemistry 111	13	D	B
Waddles, Anita	Chemistry 111	2	C-	C

* Indicates students who came in for help when they were in such straits that the probability of improvement was severly limited.

REFERENCE (Person to contact or author): Janell B. Lang

TITLE OF REFERENCE PERSON: Chairperson, Developmental Education Department

SCHOOL: The Michael J. Owens Technical College, Toledo, Ohio

DESCRIPTIVE TITLE OF STUDY: Comparison of Student Performances in Developmental Mathematics Programs

PERIOD OF TIME COVERED BY STUDY: Fall Quarter, 1976 and Fall Quarter, 1977

DATE OF REPORT: May, 1978

Population: Students enrolled in Developmental Mathematics course offerings during the Fall Quarters of the 1976-77 and 1977-78 academic years.

Sample: Same.

Design: Completion rates of students enrolled during the Fall Quarter, 1976 were compared to the completion rates of Fall Quarter, 1977 Developmental Mathematics students.

Treatment: During the past year several program objectives were designed to more effectively meet the needs of students enrolled in the Developmental Mathematics Laboratory. These objectives were based upon concerns that many students, while possessing varying degrees of arithmetic and algebraic deficiencies, were not successfully completing course requirements within one academic quarter. This resulted in problems of technical course sequencing and was coupled with low morale of students and instructors. These objectives included:

1. Evaluation of all test instruments for length, content validity and parallelism.

2. Assessment of test items in relation to course objectives and similarity to learning materials. (For example, differences in the difficulty level of syntax in which word problems are phrased will affect students and distort their true abilities.)

3. Improved strategies for accurate record keeping of individual student progress.

4. Provision of a certain amount of structure by breaking down long range goals into smaller, more manageable tasks.

5. Redefinition of intended learning outcomes to meet student needs within their appropriate technologies.

6. Determination of lab criteria in accordance with specific technology entry level requirements.

7. Organization and diversification of learning experiences to meet individual student needs and differing learning styles.

8. Development of a variety of instructional strategies.

9. Design of prescriptions which are more sensitive to student learning needs and styles. Also, tne scope of diagnosis has been enlarged to provide the instructor with information about the relative reading difficulty of texts and materials.

10. Utilization of study guides when new ideas, vocabulary or symbols are being presented. Utilization of reading guides when students need to read a passage and interpret its ideas, symbols and vocabulary for some specific purpose.

Measurements: In-House Arithmetic and Algebra Proficiency Examinations.

Program Goals: Completion of course requirements within one academic quarter.

Results:

STUDENT PERFORMANCES IN DEVELOPMENTAL MATHEMATICS		
	Fall Quarter, 1976	Fall Quarter, 1977
Students Enrolled	254	259
Passes	59 (23%)	161 (62%)
Incompletes	119 (47%)	47 (18%)
Failures	63 (25%)	42 (16%)
Withdrawals	13 (5%)	9 (4%)

Conclusions: Of particular significance is the fact that 62% of the students enrolled Fall Quarter, 1977 completed the program within one academic quarter as compared with 23% completing the course during the Fall Quarter, 1976. It should be noted, however, that the Developmental Mathematics courses are individualized, self-paced programs of instruction, and that some students certainly do need two academic quarters to reach a particular level of mathematical proficiency.

In conclusion, while the Fall, 1977 enrollment in the Developmental Mathematics Laboratory increased by 4 students, an additional 102 students (a 39% increase) received passing grades; 4 less students (a 1% decrease) withdrew from the program; 72 less students (a 29% decrease) received Incomplete grades; and 21 less students (a 9% decrease) failed the course. Follow-up studies, examining present and future progress of developmental students, will be conducted to ensure the academic integrity of this revised developmental mathematics curriculum.

OUTLINE

REFERENCE (Person to contact or author):	Carole Cramer
TITLE OF REFERENCE PERSON:	Instructor of Developmental Programs
SCHOOL:	Northwest Technical College
DESCRIPTIVE TITLE OF STUDY:	Developmental Reading Program
PERIOD OF TIME COVERED BY STUDY:	Fall Quarter - 1977 Winter Quarter - 1977-1978
DATE OF REPORT:	April 27, 1978

Population:

Participants in the Developmental Reading Program, a non-credit reading and study skills course, were drawn from the student population at Northwest Technical College.

Sample:

Twenty-one students involved in the reading program over fall and winter quarters 1977 - 1978 constituted the sample used in this study.

Design:

The Developmental Reading and Study Skills 0080 course was offered students, particularly freshman, who needed assistance in reading skills. Students enrolled into the program voluntarily or by the guidance counselor's recommendation from ACT or SAT test scores. Faculty may also recommend students for the non-credit program. The course met in the developmental laboratory for 50 minute sessions 4 days per week for 10 weeks. Enrollees were permitted and encouraged to continue their reading programs individually with minimal instructor supervision following termination of the regularly scheduled course. The course was taught by a full-time communications instructor in the General Studies Department.

Treatment:

Since the reading program was newly implemented in the Fall of 1977, materials and methods were experimentally used. Each class session was formally structured with part of each session devoted to individualized reading, and the other part to lecture and application of study skills.

Reading materials used included SRA College Reading Program One and Two, Listen and Read Lesson Books series, Wordcraft series, 5 Controlled Readers, A Fast Course in Speed Reading, novels, magazines, newspapers. Study skills materials consisted of a series of Listen and Read workbooks and tapes, in addition to teacher-made materials.

Each student kept his own folder of diagnostic tests, speed and comprehension tests, and cumulative work.

Testing:

The Reading Progress Scale Form 5C was used as a pre and post measurement. Controlled reader, reading speed and comprehension from beginning of course to termination of course were compared, as well as the wpm in their daily novel reading.

Program Goals:

The primary goals of the reading program were to raise students levels of competency in reading and comprehensive skills, to retain students in their technical courses with improvement of study habits, organization, test taking, note taking, etc.

Results:

Out of 21 students enrolled, 14 showed satisfactory improvement. The 7 who showed little or no progress were students who stopped attending class regularly. Because of their erratic attendance, those students were recommended to enroll in 0080 again. Only 2 of the 0080 students elected to further their reading skills in 0081, a more independent reading course.

Each student was counseled at the end of the course, showing his individual improvement in reading speed compared to comprehensive scores. The average reading increase was one grade level. Student evaluations indicated the majority of students were pleased with their rapid gains in reading and recommended that the course be offered each quarter.

Conclusions:

As this was a pilot program recently initiated at Northwest Technical College, no conclusive statistical results can be drawn. Regular attendance is mandatory for students to gain in reading skills. Most students were extremely surprised at how rapidly their speed and comprehension improved and noticed this improvement in their textbook reading for other course work. Generally, the student's interest and enjoyment in reading increased as many began taking books home to read and were buying more paperback books.

Recommendations:

More students should be encouraged to voluntarily enroll into the reading program for self-enrichment and improvement. Better permanent records need to be kept to statistically indicate the benefits gained. A full-time developmental coordinator is now being considered at Northwest Technical College as a result of the success of the developmental programs offered at the college.

OUTLINE

REFERENCE (Person to contact or author): Carolyn Bubenzer

TITLE OF REFERENCE PERSON: Director, Student Development Center

SCHOOL: Ohio University

DESCRIPTIVE TITLE OF STUDY: Evaluation of SDC's Tutoring Help Sessions

PERIOD OF TIME COVERED BY STUDY: Fall and Winter Quarters, 1977-78

DATE OF REPORT: May 1, 1978

Population: Students enrolled in one or more freshmen courses where tutoring sessions were offered and who attended the help sessions for supplementary assistance.

Sample: 313 students receiving tutoring assistance who completed end-of-quarter evaluation forms.

Design: Peer tutors are hired to lead help sessions in 40-50 freshmen level courses where many students consistently have difficulties. Course instructors invite students to attend the sessions, at no cost, to receive extra-classroom assistance.

Treatment: Tutors answer student questions and, as much as possible, work individually with students. Help sessions for each course meet for 3-8 hours each week, depending on enrollment level and degree of difficulty.

Measurements: Tutoring Help Session Evaluations, completed by students in attendance.

Program Goals (i.e., higher GPA, retention, etc.): Improved GPA.

Results: Of 313 evaluations, 282 (90%) indicated improved class performance as a result of attending the help sessions. Five said the sessions had no effect; 26 did not know.

Conclusions: The help sessions conducted by peer tutors were found helpful by the vast majority of participating students. Comments frequently indicate that some students would have dropped or failed a course without the tutor's help. The personalized attention afforded by a private tutoring arrangement (rather than small group) is definitely preferable. However, given budgetary limitations, the help sessions do seem to improve class performance in most cases.

OUTLINE*

REFERENCE (Person to contact or author): Theresa Govan

TITLE OF REFERENCE PERSON: Coordinator, Resource and Supportive Services, Center for Afro-American Studies

SCHOOL: Ohio University

DESCRIPTIVE TITLE OF STUDY: Comparative GPA's and Retention Rates Before and After Participation in AIDE by Select Students

PERIOD OF TIME COVERED BY STUDY: Winter, 1978

DATE OF REPORT: May 1, 1978

Population: Nine freshmen academically dropped after Fall, 1977, who were re-admitted to participate in "Aid In Developmental Education" (AIDE), sponsored by the Center for Afro-American Studies.

Sample: Same

Design: In response to a number of freshmen being academically dropped after one quarter, the Center for Afro-American Studies reinstated nine students for Winter in an attempt to allow them to pursue their educational goals.

Treatment: AIDE participants during Winter quarter were allowed to enroll in a maximum of twelve credit hours, were severely limited in extra-curricular activity, selected courses (with counselor assistance) according to competencies and basic skills needs, enrolled in one beginning Black Studies course, and met weekly with their developmental education counselor.

Measurement: Fall and Winter Quarters' GPA's were compared to decide continuation at the University. In addition, the developmental education counselors evaluated progress made in the students' attitudes and motivation for success.

Program Goals (i.e., higher GPA, retention, etc.): Eligibility for academic retention at the University through improved GPA.

Results: Of the nine students participating, three showed marked improvement in GPA and in motivational attitudes. These three were retained by the University for Spring Quarter and are continuing in the AIDE program. Six students did not show sufficient improvement and were dropped from the University after Winter Quarter.

Conclusions: The rate of retention for the AIDE students (33%) at first glance appears low. However, one must review the facts about the AIDE participants to fairly assess the succes/failure of the program. All nine students had been dropped from the University after Fall Quarter; most had earned less than a 1.0 GPA during the first quarter. Without AIDE all nine would have been lost to the University, their education brought to a halt. The fact that three students made sufficient improvement to be continued speaks to the success of the program. The Center for Afro-American Studies plans to continue the AIDE program in hopes that a reduced course load, a carefully structured academic program, and intensive counseling will allow more students to complete degree programs.

OUTLINE*

REFERENCE (Person to contact or author): Betty Hollow

TITLE OF REFERENCE PERSON: Reading Coordinator, Student Development Center

SCHOOL: Ohio University

DESCRIPTIVE TITLE OF STUDY: Reading Skills Improvement

PERIOD OF TIME COVERED BY STUDY: Fall and Winter Quarters, 1977-78

DATE OF REPORT: May 10, 1978

Population: One hundred forty-eight students participating in the Student Development Center Reading Program, including those working individually and those enrolled in the reading course, during Fall and Winter Quarters, 1977-78.

Sample: Same

Design: Students needing reading assistance could receive help on an individualized basis (self- or faculty-referred) or in the structured course. During Fall and Winter, 34 took the course, 114 worked individually for varying lengths of time.

Treatment: A wide variety of methods and materials were employed, the choice of which was determined by the following factors: (1) specific areas of weakness, (2) extent of difficulty, (3) degree of student's self-direction, (4) student's preference. Materials used included College Skills' Passages for Comprehension, the SQ_3R studying method, Lyle Miller's Building Reading Efficiency, SRA materials Sack-Yourman Developmental Reading course and teacher-made materials.

Records were kept of each student's pre- and post-tests, counseling notes, and cumulative work.

Measurement: Pre- and post-tests were given for vocabulary, reading rate, and comprehension level (Nelson-Denny Reading Test).

Program Goals (i.e., higher GPA, retention, etc.): Improved competency in reading skills.

Results:

Fall, 1977 - Average gain in reading rate was 305 words per minute or 112%, with a small increment in comprehension.

Average gain in vocabulary was 12 percentile points.

Average total gain in reading skills was 6.9 percentile points.

Winter, 1978 - Average gain in reading rate was 297 words per minute, or 125%, with comprehension rate remaining stable.

Average gain in vocabulary was 10 percentile points.

Average total gain in reading skills was 1.1 grade level equivalent.

Conclusions: Evaluative feedback from students and test data indicate that in most instances significant gains in reading skills were achieved by program participants. Many variables affected the extent of improvement; students enrolled in the credit course maintained higher interest, completed more work, and improved skills more significantly than those not rewarded with credit. A direct relationship was evident between the extent of contact with the Reading Director and reading improvement.

Ohio State University/Central Ohio Technical College

Newark Campus

Developmental Education Program

Reference: Mr. Edward E. Hubbard

Title: Program Coordinator, Developmental Education Programs

School: Ohio State University/Central Ohio Technical College

Descriptive Title of Study: Reading Skills Development Seminar: Pre-interim and Post-test results

Period of Time Covered By Study: Winter Quarter 1978

Date of Report: May 1, 1978

Population: A mixture of students which included freshman, sophomores and students in our reinstatement workshop who enrolled for the non-credit Reading Skills Development Seminar.

Sample: Only those students who completed the entire course.

Design: The Reading Skills Development seminar students were divided equally into two class sections, a 10:00am and 1:00pm. Prior to this, each student was tested on the Nelson Denny Reading test to obtain an assessment of their entry level skills. Form "A" was given to the morning section and form "B" to the afternoon section.

The miximum class limit for each section was seventeen (17) students. Of that total, nine students in each section completed the seminar. Both classes met three days per week for ten weeks.

Treatment: At the beginning of the seminar the program coordinator took each student individually through a ten point checklist covering the following areas where they may need assistance; 1) specific reading problems, 2) study skills, 3) listening skills, 4) math skills, 5) communications, 6) career decision making skills, 7) comprehension skills, 8) perceptual accuracy and visual efficiency skills, 9) concentration skills, and 10) overall academic adjustment.

Based on an analysis of the student's strength in each area of the above list, they were given program sheets with specific directions to utilize materials that addressed their specific need(s). Each student was also required to set goals for themselves during the first and the fifth week of the seminar.

All students enrolled in the course were required to have

a complete study skills analysis done by our Peer Counseling Program. The peer counselors tested each student on the Brown and Holtzman Survey of Study Habits and Attitudes Test and gave them an interpretation of the results. The counselors also assisted the students in a step-by-step explanation of study techniques listed in the 'Tip Sheets to Effective Study Habits Manual', compiled by Edward E. Hubbard, Program Coordinator for the Newark Campus.

Materials used in the seminar included E.D.L. Combo-8 controlled readers, the SRA Reading for Understanding Kit, E.D.L. Perceptual Accuracy and Visual Efficiency Unit, the Reading Efficiency (checkpoint) test, Bergen-Evans Vocabulary and Wordcraft Series, the Relevance of Listening series and instructor-made materials. Records and individual file folders were kept on each student's diagnostic and interim test scores, as well as reading progress and skills charts. Students were required to meet with the program coordinator (who served as instructor) at least once per week.

Measurement: The Nelson Denny Reading Test, form A and B, and the E.D.L. Reading Efficiency Checks.

Program Goals: The seminar was designed to improve student skill levels in reading, perceptual accuracy, comprehension and vocabulary.

Results: The beginning and ending Nelson Denny test scores for the nine o'clock class exhibited a negative gain in vocabulary, an insignificant gain (two months) in comprehension and an appreciable gain in the reading rate (five and one-half months) and words-per-minute. Examining the class progress on the checkpoint test, students faired better in both reading rate and comprehension. The nine o'clock class averaged a 227.57 word-per-minute reading rate on the first checkpoint test with 78% comprehension and ended with 312.80 word-per-minute reading rate with 74% comprehension.

The one o'clock section made greater gains in all reading test areas. The class scored an average eight month gain in vocabulary, a one year gain in comprehension and a two year, eight month gain in reading rate and number of words-per-minute. Reviewing the class progress on the checkpoint test, the one o'clock class averaged a beginning score of 284.75 words-per-minute with 73.75% comprehension, and ended with an average score of 431 words-per-minute with 76% comprehension.

Conclusions: Comparing the two skills development classes, the scores seem to indicate that the morning hour is not as conducive to skills development as the afternoon hour. This is supported by the pre-and post-examination of the Nelson Denny Reading Test as well as the scores achieved on the checkpoint timed reading test (see charts). The scores also

point to the notion that the content of the checkpoint reading test can significantly enhance or inhibit performance levels of students. This can be substantiated by the significant increase in both the number of words-per-minute and the comprehension percentages on checkpoint test two in comparison to checkpoint test one and three for each class section. All of the students in both classes indicated that they really enjoyed the story in the second checkpoint test.

Recognizing these findings, this information was shared with both classes. Students were advised to recognize that it may take much more motivation to perform effectively during the morning hours, in their classwork and studying, than during the afternoon hours. This analysis seems to suggest that possibly the afternoon hours are the best time to study. Overall, it seems to support the notion that students enrolled in the reading skills program can improve their skills levels.

Further Comments: Charts

Non-Credit Skills Development Class

Beginning Nelson Denny
(Class average)
9:00 Session

Voc.	Comp.	RR	WPM
11.80	11.01	10.48	217.44

Ending Nelson Denny
(Class average)

Voc.	Comp.	RR	WPM
10.68	11.03	11.48	301.77

Gain Percent
(Based on average)

Voc.	Comp.	RR	WPM
-1.12	.02	.55	84.33

CK PT 1

WPM	%
227.57	78.57

CK PT 2

WPM	%
289.11	85.55

CK PT 3

WPM	%
305.44	80.0

CK PT 4

WPM	%
312.80	74

Gain Percent

CK PT 1 to CK PT 2

WPM	%
61.54	6.98

CK PT 2 to CK PT 3

WPM	%
16.33	-5.55

CK PT 3 to CK PT 4

WPM	%
7.36	-6

Non-Credit Skills Development Class

Beginning Nelson Denny
(Class average)
1:00 Session

Voc.	Comp.	RR	WPM
12.28	11.22	11.16	235.66

Ending Nelson Denny
(Class average)

Voc.	Comp.	RR	WPM
13.08	12.22	14.0	360.14

Gain Percent
(Based on average)

Voc.	Comp.	RR	WPM
0.80	1.00	2.84	124.48

CK PT 1

WPM	%
284.75	73.75

CK PT 2

WPM	%
410.62	82.5

CK PT 3

WPM	%
310.60	84.00

CK PT 4

WPM	%
431.00	76.00

Gain Percent

CK PT 1 to CK PT 2

WPM	%
125.87	8.75

CK PT 2 to CK PT 3

WPM	%
100.02	1.5

CK PT 3 to CK PT 4

WPM	%
120.40	-8

REFERENCE: Steve Higgins

TITLE OF REFERENCE PERSON: Director of Developmental Education

SCHOOL: Ohio State University/Lima Technical College--Lima Campus
4300 Campus Dr. Lima, OH 45804

DESCRIPTIVE TITLE OF STUDY: Comparison of Learning Ratios Prior and During the Reading Improvement Program, DE-103

PERIOD OF TIME COVERED BY STUDY: Autumn Quarter, 1977 (10 weeks)

DATE OF REPORT: January 11, 1978

POPULATION: Students participating in a non-credit developmental education program.

SAMPLE: 25 Lima Technical College students enrolled in a reading improvement course, DE-103.

DESIGN: The ratio-of-learning is a measurement of students' learning rate prior to entering a special program versus their learning rate while they are in a special program.* Because of the unreliability of group test scores for individual students, the ratio-of-learning is determined for all students in a special program, rather than for individual students.

The ratios, as applied to reading ability, were determined by the following factors: total number of years in school, length of time in the special program, and pre and post-test reading achievement scores.

$$\frac{\text{total yrs. in school (including yrs. retained)}}{\text{\# of students}} = \frac{305.4}{25} = 12.2 \text{ yrs./student}$$

$$\frac{\text{total yrs. achievement (pretest)}}{\text{\# of students}} = \frac{274.3}{25} = 10.9 \text{ yrs. ach./student at beginning of program}$$

Learning Ratio of Reading (prior to program):

$$\frac{\text{yrs. achievement/student}}{\text{total yrs. in school}} = \frac{10.9}{12.2} = .89$$

continued...

*The ratio-of-learning has been adapted from an article by Eldon Ekwall entitled, "Measuring Gains in Remedial Reading," which appeared in the November 1972, Reading Teacher, Vol. 26, 138-41.

Average gain/student during tutoring period (post-test minus pre-test)

total yrs. ach. on post = 322.1 — 322.1
total yrs. ach. on pre = 274.3 — -274.3
47.8 total yrs. gain

$\frac{\text{total yrs. gained}}{\text{\# of students}} = \frac{47.8}{25} = 1.9$ yrs. gained/student

Learning Ratio of Reading (during the program):

$\frac{\text{yrs. gained during program/student}}{\text{length of program (2.5 mo. or .25 yrs.}} = \frac{1.9}{.25} = 7.6$

TREATMENT: After diagnostic testing, students were placed in properly leveled materials designed to improve comprehension, vocabulary and reading rate. Materials included SRA College Reading Labs, EDL Word Clues, the McGraw-Hill Basic Skills series, Timed Readings by Fry, Sack/Yourman College Skills series, and a wide variety of individual programmed texts.

Student progress was recorded, evaluated and guided weekly by a trained reading instructor.

MEASUREMENT: Nelson-Denny Reading Test, forms C and D.

PROGRAM GOALS: To provide understanding and practice toward improving the skills that facilitate comprehension, develop vocabulary, and increase reading rate.

RESULTS: Results were obtained by comparing the group's average learning rate before entering the special program with the learning rate established while participating in the special program. The prior rate was .89 or the students had been gaining .89 month's achievement for every month they were in school. While enrolled in the special program, their average rate of learning was 7.6, or they gained 7.6 month's achievement for every month in the special program.

As one can see, students were learning 8.5 times as rapidly as they had been: $7.6 \div .89 = 8.5$

CONCLUSIONS: There would certainly be no doubt about the effectiveness of this program. Any learning rate that was greater than .89 (the students' rate prior to the special program) would be indication of improvement in this group's rate of learning.

REFERENCE: Cathleen Fluty

TITLE: Coordinator, Learning Laboratory South

SCHOOL: Shawnee State Community College

DESCRIPTIVE TITLE OF STUDY: Use of Developmental Education Programs, Students Petitioning as Candidates for Graduation, 1978

DATE OF REPORT: May, 1978

BACKGROUND: Shawnee State Community College, since its inception in July, 1975, has had three basic components of its Developmental Education Program - Developmental Education Courses (institution credit only), Peer Tutoring, and Learning Laboratories on both its North and South Campuses. In August, 1978, the completion of new buildings will make it possible for the college to operate on one campus and consolidate these Programs into one larger center.

In order to reinforce the quarterly student evaluations and assist in decision-making concerning future plans, a survey was mailed in April, 1978, to those students who had petitioned for graduation in 1978. In making this survey, the staff was more interested in receiving comments and suggestions for improvement from students than it was in actual numbers.

RESULTS OF SURVEY:

Number of respondents: 94
Students who have utilized one or more components of Developmental Education Program: 68

NUMBER OF STUDENTS - DEVELOPMENTAL EDUCATION COURSES

Fundamental Mathematics	5
Fundamental Chemistry	20
Fundamental Biology	6
Fundamental Physics	3
Study Techniques	3
Learning Skills Orientation	9
Total	46

NUMBER OF STUDENTS USING PEER TUTORS

Mathematics	6
Study Techniques	1
Chemistry	6
Biology	2
Anatomy and Physiology	8
Accounting	5
Psychology	1
Physics	2
Introduction to Business	1
Business Law	1
Business Statistics	1
Total	34

NUMBER OF STUDENTS USING LEARNING LABORATORIES FOR SELF-IMPROVEMENT

Reading Skills	13
Study Techniques	16
Total	29

NUMBER OF STUDENTS USING LEARNING LABORATORIES AS A SUPPLEMENT TO CLASS INSTRUCTION

Nursing	30
Radiology	4
Contemporary Writing Skills	9
Respiratory	3
Emergency Medical Technician	2
Anatomy and Physiology	3
Psychology	3
Mathematics	4
Corrections	2
Accounting	2
Biology	1
Typing	1
Education	1
Total	65

SAMPLING OF STUDENT COMMENTS:

After being out of school for about four years, the Study Technique Class was very beneficial. For the sake of others like me, I hope it isn't discontinued.

A Speed Reading course should be offered.

The Learning Lab has many new research books with up-to-date material.

I feel that if I hadn't had the Learning Lab's books on Neurological Nursing, I wouldn't have passed the course last quarter.

The Learning Lab keeps improving - the last three years it has grown in books and films.

It would have been more convenient for me if the Learning Lab were open later in the evening.

The Developmental Courses are a great help. I just would not have had the money to pay for them, but they would be worth it. The Learning Lab is a great help. I use it often.

Needs longer hours.

I think your resources are great, but there never seemed to be time to make use of the material.

I believe this program is beneficial to any student who is in need of help and afraid to ask his instructor for it.

Tutor program needs more counseling.

I was a student for five quarters. Of the students I tutored, I felt that the most common learning problem was the lack of background knowledge...a pre-test for each technology should be given to beginning students. If they cannot pass the pre-test,

they should be required to take Developmental Courses.

I have been in the Learning Lab while tutoring and think it is very useful. I myself haven't used it but I have seen others, and I know without the Lab they probably wouldn't get through classes.

Strange as it seems, many students don't know about peer tutoring and don't know what the Learning Lab has to offer.

A lot of films were used in class from the Learning Lab. If I had time and needed help, I think the Learning Laboratory would be the first place I would look.

I feel the Fundamental Physics class should be available to more students.

This is the first I ever heard of it. I didn't know about it

Need more material in the Special Education field.

I feel the Learning Skills course should be a prerequisite to LPN training or any other Allied Health Program.

Students need to be better informed about the program.

I think students need to be made more aware of the resources available.

Helped me in English and in other courses in which I had to read a lot and retain information.

It was one of the most useful parts of the college. I would recommend the use of the Learning Laboratory to any freshman.

RECOMMENDATIONS:

Although the results of the survey were far from conclusive and somewhat contradictory in some instances, they did point out some of the strengths and weaknesses of the program. The staff feels that all three components are essential and will strive for improvement. Generally the suggestions reinforced the quarterly evaluation.

1. A more comprehensive Orientation Program for entering students. The Orientation Program as it is now operating needs improvement, particularly for part-time night students and for those students entering Winter, Spring, and Summer Quarters.

2. More flexible scheduling during regular school year for Developmental Education courses. In Summer Quarter these courses are offered for both day and night students. During regular school year they are offered only on Friday night and Saturday morning.

3. Systematic training of Peer Tutors, especially so that instructors will receive reports of student progress without fail.

4. Longer hours, more staff, and more material for Learning Center.

5. Greater concentration on serving our expanding night-time enrollment.

6. Better co-ordination of Developmental Programs with regular curriculum through more in-service work with instructors in all technologies.

RECEIVED
MAY 22 1978
EDUCATIONAL RESEARCH

REFERENCE (Person to contact or author): Frank Doll

TITLE OF REFERENCE PERSON: Assistant Professor of Reading

SCHOOL: Sinclair Community College

DESCRIPTIVE TITLE OF STUDY: Preliminary Investigative Study of Sinclair Community College students, graduating in academic year 1976-1977, to determine those students who have taken one or more Developmental courses.

PERIOD OF TIME COVERED BY STUDY: 1969-1977

DATE OF REPORT: May 5, 1978

Population: Sinclair Community College students having completed the requirements for graduation, in academic year of 1976-1977, as identified by the Registrars office.

Sample: A random sample of the 183 students filing for graduation applications, which represents 22% of the total graduation class in academic year 1976-1977.

Design: Comparing the % of students enrolling in the Developmental studies courses for academic year 1976-1977 to the % of graduates, in academic year '76-'77, having completed one or more Developmental courses successfully.

Treatment: Not applicable

Measurements: Not applicable

Program Goals (i.e. higher GPA, retention, etc.): Academic success for the student i.e. retention through graduation at Sinclair Community College.

Results:
1. 32% of the students sampled had taken at least one Developmental course.
2. 14% of the students sampled took more than one Developmental course.
3. 7% of the students sampled took more than two Developmental courses.
4. 28% of the students sampled took either the Developmental English course 075 or Eng. 105. (4[illegible]% of these students took both English courses.)
5. 15% of the students sampled took the 065 Developmental Reading course.
6. 6% of the students sampled repeated their Developmental courses at least once.

Conclusions: Since the Developmental program regularly enrolls 20% of the student body and 32% of the graduates had taken one or more Developmental course, it would appear the Developmental program from the sample taken is, apparently meeting the preparation in basic skills necessary for graduation, as one measure of academic success. A further investigation into a larger sample will provide a more definitive conclusion.

REFERENCES: Martin McKoski, Director of Developmental Programs
Diane Vukovich, Assistant Director of Developmental Programs

SCHOOL: The University of Akron

DESCRIPTIVE TITLE OF STUDY: Comparison of Pre- and Posttest Scores for Students Enrolled in Developmental English (020:041).

PERIOD OF TIME COVERED BY STUDY: Fall Quarter, 1977

DATE OF REPORT: 4/17/78

Population: All students enrolled in Developmental English (020:041) during Fall Quarter, 1977 for whom both pre- and posttest scores were available (N= 145).

Sample: A table of random numbers was used to select a sample of twenty-five (N= 25) subjects from the above population.

Design: The McGraw-Hill Writing Test, Form A was administered as a pretest. Form B was given as a posttest. Pre- and posttest raw scores were used to calculate sample means. The t test for correlated data was used to test for a significant difference between the pre- and posttest sample means. The t test formula used was:

$$t = \frac{|\bar{X}_1 - \bar{X}_2|}{\sqrt{\frac{N\Sigma D^2 - (\Sigma D)^2}{N^2(N-1)}}}$$

where

t= the value by which the statistical significance of the mean difference will be judged

$\bar{X}_1$= the sample mean of the posttest scores

$\bar{X}_2$= the sample mean of the pretest scores

D= the difference between any pair of pre- and posttest scores

N= the number of pairs of scores

The t value derived from this correlated model was interpreted for significance according to degrees

of freedom equaling the number of pairs of scores minus one (n-1). A one-tailed test was used.

Treatment: Students participated in a 10-week Developmental English course. Classes met at regularly scheduled times for three hours each week. Students received basic instruction in composition skills. Instructors used both group and individualized approaches. Student assistants worked with instructors in the classroom and were also available for individual and group tutoring. The Writing Clinic (Prentice-Hall) and Sentence Craft (Ginn Co.) were the required texts.

Measurements: Pretest - McGraw-Hill Writing Test, Form A
Posttest - McGraw-Hill Writing Test, Form B

Program Goals: To increase the student's level of competency in written composition.

Results: The sample mean for the pretest scores was 31.80 ($\bar{X}_2 = 31.80$); for the posttest scores, 39.04 ($\bar{X}_1 = 39.04$). The difference between these sample means (D = 7.24) was found to be significant beyond the .0005 level for a one-tailed test.

Conclusions: Completion of Developmental English (020:041) did result in a significant increase in the level of competency in written composition for this student sample and as measured by the McGraw-Hill Tests.

REFERENCES: Martin McKoski, Director of Developmental Programs
Diane Vukovich, Assistant Director of Developmental Programs

SCHOOL: The University of Akron

DESCRIPTIVE TITLE OF STUDY: Comparison of Pre- and Posttest Scores for Students Enrolled in Developmental Mathematics (020:051)

PERIOD OF TIME COVERED BY STUDY: Fall Quarter, 1977

DATE OF REPORT: 4/17/78

Population: All students enrolled in Developmental Mathematics (020:051) during Fall Quarter, 1977 for whom both pre- and posttest scores were available (N= 242).

Sample: A table of random numbers was used to select a sample of twenty-five (N= 25) subjects from the above population.

Design: The Developmental Mathematics Test, Form A was administered as a pretest. Form B was given as a posttest. Pre- and posttest raw scores were used to calculate sample means. The t test for correlated data was used to test for a significant difference between the pre- and posttest sample means. The t test formula used was:

$$t = \frac{|\bar{X}_1 - \bar{X}_2|}{\sqrt{\frac{N\Sigma D^2 - (\Sigma D)^2}{N^2(N-1)}}}$$

where

t= the value by which the statistical significance of the mean difference will be judged

$\bar{X}_1$= the sample mean of the posttest scores

$\bar{X}_2$= the sample mean of the pretest scores

D= the difference between any pair of pre- and posttest scores

N= the number of pairs of scores

The t value derived from this correlated model was interpreted for significance according to degrees

of freedom equaling the number of pairs of scores minus one (n-1). A one-tailed test was used.

Treatment: Students participated in a 10-week Developmental Mathematics course. Classes met at regularly scheduled times for three hours each week. Students received instruction in basic arithmetic skills and elementary algebra. Instructors used an individualized approach. Student assistants worked with the instructors in the classrooms and were also available for individual and group tutoring. Essential Mathematics for College Students, Third Edition (Prentice-Hall) was the required text.

Measurements: Pretest - The Developmental Mathematics Test, Form A
Posttest - The Developmental Mathematics Test, Form B
Both tests were prepared by the Developmental Mathematics faculty.

Program Goals: To increase the student's level of competency in basic arithmetic and elementary algebra.

Results: The sample mean for the pretest scores was 9.68 ($\bar{X}_2 = 9.68$); for the posttest scores, 20.12 ($\bar{X}_1 = 20.12$). The difference between these sample means ($D = 10.44$) was found to be significant beyond the .0005 level for a one-tailed test.

Conclusions: Completion of Developmental Mathematics (020:051) did result in a significant increase in basic arithmetic and elementary algebra skills for this student sample and as measured by The Developmental Mathematics Tests.

REFERENCES: Martin McKoski, Director of Developmental Programs
Diane Vukovich, Assistant Director of Developmental Programs

SCHOOL: The University of Akron

DESCRIPTIVE TITLE OF STUDY: Comparison of Pre- and Posttest Scores for Students Enrolled in Developmental Reading (020:061)

PERIOD OF TIME COVERED BY STUDY: Fall Quarter, 1977

DATE OF REPORT: 4/17/78

Population: All students enrolled in Developmental Reading (020:061) during Fall Quarter, 1977 for whom both pre- and posttest scores were available (N = 96)

Sample: A table of random numbers was used to select a sample of twenty-five (N= 25) subjects from the above population.

Design: The Stanford Diagnostic Reading Test, Form A was administered as a pretest. Form B was given as a posttest. Pre- and posttest raw scores were used to calculate sample means. The t test for correlated data was used to test for a significant difference between the pre- and posttest sample means. The t test formula used was:

$$t = \frac{|\bar{X}_1 - \bar{X}_2|}{\sqrt{\frac{N\Sigma D^2 - (\Sigma D)^2}{N^2(N-1)}}}$$

where

t= the value by which the statistical significance of the mean difference will be judged

$\bar{X}_1$= the sample mean of the posttest scores

$\bar{X}_2$= the sample mean of the pretest scores

D= the difference between any pair of pre- and posttest scores

N= the number of pairs of scores

The t value derived from this correlated model was interpreted for significance according to degrees

of freedom equaling the number of pairs of scores minus one (n-1). A one-tailed test was used.

Treatment: Students participated in a 10-week Developmental Reading course. Classes met at regularly scheduled times for three hours each week. Students received instruction in general reading with emphasis given to increasing vocabulary, and understanding and remembering written material. Instructors used lectures, discussion, and individual study. Student assistants were also available for individual tutoring sessions. Eighty-eight Passages to Develop Reading Comprehension (College Skills Center) was the required text.

Measurements: Pretest - Stanford Diagnostic Reading Test, Form A
Posttest - Stanford Diagnostic Reading Test, Form B

Program Goals: To develop the students' general reading abilities.

Results: The sample mean for the pretest scores was 32.84 ($\bar{X}_2 = 32.84$); for the posttest scores, 36.56 ($\bar{X}_1 = 36.56$). The difference between these sample means ($D = 3.72$) was found to be significant beyond the .01 level for a one-tailed test.

Conclusions: Completion of Developmental Reading (020:061) did result in a significant increase in the students' general reading abilities for this student sample and as measured by the Stanford Diagnostic Reading Test.

REFERENCES: Martin McKoski, Director of Developmental Programs
Diane Vukovich, Assistant Director of Developmental Programs

SCHOOL: The University of Akron

DESCRIPTIVE TITLE OF STUDY: Follow-up Study on Developmental Mathematics Students

PERIOD OF TIME COVERED BY STUDY: Fall Quarter, 1975 through Winter Quarter, 1977

DATE OF REPORT: 4/17/78

Population: All students enrolled in Developmental Mathematics (020:051) from Fall Quarter, 1975 through Winter Quarter, 1977 (N= 1,329).

Sample: The total population.

Design: Each student's transcript was checked to determine whether he enrolled in a credit mathematics course during the quarter immediately following his completion of Developmental Mathematics (020:051). If the student did enroll in a credit course, his grade was checked. A grade of D or better was regarded as passing. A count was also kept of students who did not enroll in any mathematics course or who did not attend the university during the quarter following the completion of Developmental Mathematics (020:051).

Treatment: One quarter of coursework in Developmental Mathematics, as described in the "Comparison of Pre- and Post-test Scores for Students Enrolled in Developmental Mathematics (020:051)."

Measurements: Grades and other pertinent information obtained from student transcripts.

Program Goals: Retention; to prepare the student to pass the credit mathematics course required for his program.

Results: See attached table.

Conclusions: Approximately 80% of the students enrolled in the Developmental Mathematics courses did return to the University the following quarter, This compared favorably with the university-wide retention rate which varies between 75% and 80%.

The % Passing data showed that the majority of the

students who entered the College of Education (Numbers Communication) or the Community and Technical College (Math Analysis I) mathematics courses were able to successfully complete the courses. However, slightly less that 50% were able to pass the more rigorous courses (Modern University Math - MUM and Elementary Functions I) required for most programs in the four-year colleges. Therefore many of the students who are heading toward these more difficult courses are now being encouraged to take one quarter of Math Analysis I first for additional preparation. It appears that in some cases the gap between the student's entry-level skills and those needed for success in MUM or Elementary Functions I is simply to great to bridge in ten weeks. Because the data revealed that 23.70% of the students did not take any mathematics course the following quarter, the Developmental Mathematics faculty are working with the student's academic advisor to try to urge the student to take his required mathematics course immediately following Developmental Mathematics. Future follow-up studies will be conducted to determine the effect of these approaches.

THE UNIVERSITY OF AKRON
THE DEPARTMENT OF DEVELOPMENTAL PROGRAMS
FOLLOW-UP SUMMARY
ON
DEVELOPMENTAL STUDENTS
FALL, 1975 THROUGH WINTER, 1977*

Category	Number Entering	% Entering **	Number Passing	% Passing
Numbers Communication	52	3.91%	40	76.92%
Math Analysis I	238	17.91%	156	65.55%
MUM	119	8.95%	51***	42.86%
Elem. Functions I	13	.98%	6	46.15%
No Math Course	315	23.70%		
Did Not Attend	260	19.56%		

*Figures only reveal what happened to the Developmental Math student the following quarter and only report the six major categories.

**N=1,329 (Total Developmental Math enrollment - Fall, 1975 through Winter, 1977)

***Passed all four modules.

Reference: Elizabeth Buerschen, Instructor of Basic Math Skills
Dr. Anne B. Shearer, Director of Developmental Education

School: Wright State University

Descriptive Title of Study: Comparison of Pre- and Post-Test Scores for Students Enrolled in Basic Math Skills

Period of Time Covered by Study: 1977-78 Academic Year

Date: June 1978

Population: All students enrolled in WSU's 093 Basic Math Skills course during the 1977-1978 academic year. These were students advised or self-directed to enroll in the course to overcome deficiencies or aversions to mathematics.

Sample: All students from the above population for whom both pre- and post-test scores were available. This includes 37 students.

Design: The Cooperative Mathematics Test: Arithemetic (Educational Testing Service). Form A was administered as a pre-test and Form B was administered as a post-test.

Pre-and Post-Test raw scores were then compared for the sample and a t-test for correlated samples was used to test for significance of difference between testings. The t test:

$$t = \frac{\bar{D}}{SD} \quad \text{where } \bar{D} = \text{mean of } \frac{\text{post-pre}}{N}$$

Treatment: Students completed a 10-week quarter of instruction; using a competency-based method for learning units. Four input factors were responsible for the student's achievement: instructor, in-class tutors, Essential Mathematics for College Students (Prentice-Hall) and their own voluntary group sessions.

Measurement: The Cooperative Mathematics Test: Arithemetic, Forms A and B

Program Goals: To develop basic skills of arithmetic and elementary algebra functions and their application for successful completion of the introductory university algebra course (for credit).

Results: Analysis of difference between pre- and post-test raw scores revealed that there was improvement at the .6 level.

Conclusions: For most students, completion of the SS093 Basic Math Skills course did result in a significant increase in basic arithmetic skills. The algebra that all students did study is not tested in the measurement instrument. Retention studies should be undertaken to see if the 093 Math course work and content does help students succeed in their following college math courses.

ENGLISH SKILLS

Reference: Delores Lytle, Fundamental English Skills Instructor
Dr. Anne B. Shearer, Director of Developmental Education

School: Wright State University

Descriptive Title of Study: Annual Report of Pre- and Post-Test Scores

Period of Time Covered by Study: 1977-78 Academic Year

Date of Report: June 1978

Population: The students enrolled in the 092 English Skills course for the 77-78 academic year. These were students identified by themselves, advisors, or instructors as having deficiencies in writing skills.

Sample: All students from the above population for whom both pre- and post-test scores were available. This includes a total of 78 students.

Design: Written English Expression Placement Test (Comparative Guidance and Placement Program of CEEB)

Pre- and Post-Test scores were then compared for the sample and a t-test for correlated samples was used for testing the significance of the difference between testings. The t-test:

$$t = \frac{\overline{D}}{SD}$$

There was an improvement at the .29 level.

Conclusions: Students who enrolled in the 092 English Skills course show a significant increase in basic English scores. It is proposed that the composition part of English Skills 092 be taught in a separate 10-week session so that adequate time can be given to this aspect of writing.

READING & STUDY SKILLS

Reference: Willi Young, Anne Fornal (Study Skills Instructors)
Dr. Anne B. Shearer, Director of Developmental Education

School: Wright State University

Descriptive Title of Study: Annual Report of Pre- and Post-Test Scores for Study Skills and Reading Courses

Period of Time Covered by Study: 1977-78 Academic Year

Date of Report: June 1978

Population: Participants in Wright State University's 091 Study Skills/Reading Improvement course. The students were identified by themselves or by advisors as those whose reading, comprehension, vocabulary or spelling needed polish.

Sample: All students from the above population for whom both pre- and post-test scores were available.

Design: After administration of the Nelson-Denny Reading Test, Form A as a Pre-Test, group and individual needs were assessed and modules of material were prescribed. Instructors covered all material in a prepared syllabus focusing on vocabulary, comprehension, and reading rates.

Treatment: Students met for a 10-week quarter course and were also expected to go to the skills laboratory on a regular basis to complete their work. Here they used programmed materials and the hardware in the laboratory. In addition to the reading machines, the instructors used a visual screening device to determine any visual acuity problems that were referred to optometrists.

Measurements: Nelson-Denny Reading Tests:
Form A as a Pre-Test
Form B as a Post-Test

Goals: To provide a course which will:
a) instruct students in building study habits which help them achieve above the 7th decile on the Study Habits Checklist;
b) provide techniques for improving reading comprehension and speed to the college level (14.0) grade level;
c) improve the vocabulary to the 10th grade level.

Results: Study Habits: Students who completed the study habits checklist placed above the 7th decile rank, except for one student who did not attend regularly.

Reading: 50% of the program students when tested were found to be reading between 7th and 9th grade level on the pre-test. 96% of the students increased in reading speed. 62% increased in areas of vocabulary and comprehension. 58% increased in both speed, vocabulary and comprehension. 31% increased in speed and comprehension more than one grade level. 10% of the students were able to increase the speed and comprehension more than 2 grade levels.

Results: Analysis of the pre- and post-test scores by grade levels shows that students within 10 weeks were also able to raise one or more grade levels in reading. All students achieve a college level (7th decile) of study habits due to this course.

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